

NEOPURCELLIA CAPRICORNIA, A NEW OPILIONID (OPILIONES:
CYPHOPHTHALMI: SIRONIDAE: SIRONINAE) FROM QUEENSLAND
AUSTRALIA

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ABSTRACT

Neopurcellia capricornia sp. nov. is the second cyphophthalmid to be described from Australia.

The cyphophthalmids are small mite-like Opiliones which are characterised by their granulate integument, the possession of a pair of odoriferous glands opening dorsally on mounds on the cephalothorax and the absence of a genital operculum. They are usually blind. The sub-order Cyphophthalmi consists of one family, Sironidae which is divided into two sub-families Stylocellinae and Sironinae. The Australian and New Zealand genera belong to the sub-family Sironinae in which the anterior coxae are movable. When Forster (1955) described the first cyphophthalmid from Australia he placed it in the genus *Rakaia* Hirst which was already represented in New Zealand by 20 species. So it is not surprising that this species should belong to the other New Zealand genus, *Neopurcellia* which has three N.Z. species. *Neopurcellia* is characterised by the bipartite tarsus IV of the male.

Neopurcellia capricornia sp. nov.
Figs. 1-13

MATERIAL EXAMINED

HOLOTYPE: Queensland Museum QM W5765, ♂; litter, rainforest, Finch Hatton, mid-eastern Queensland; collected V. Davies and R. Kohout, 10.iv.75.

PARATYPE: QM W5766, ♀; same data as holotype.

DESCRIPTION OF MALE

COLOUR: Red brown body with light yellow brown appendages and light area round the odoriferous gland openings. An indistinct dark line mid-dorsally.

BODY: Body length 2.00mm, cephalothorax width 1.16mm, abdomen width 1.16mm. Body surface granulate (Fig. 1) with sparse hairs increasing in length towards the posterior end. Odoriferous glands open on mounds about twice their

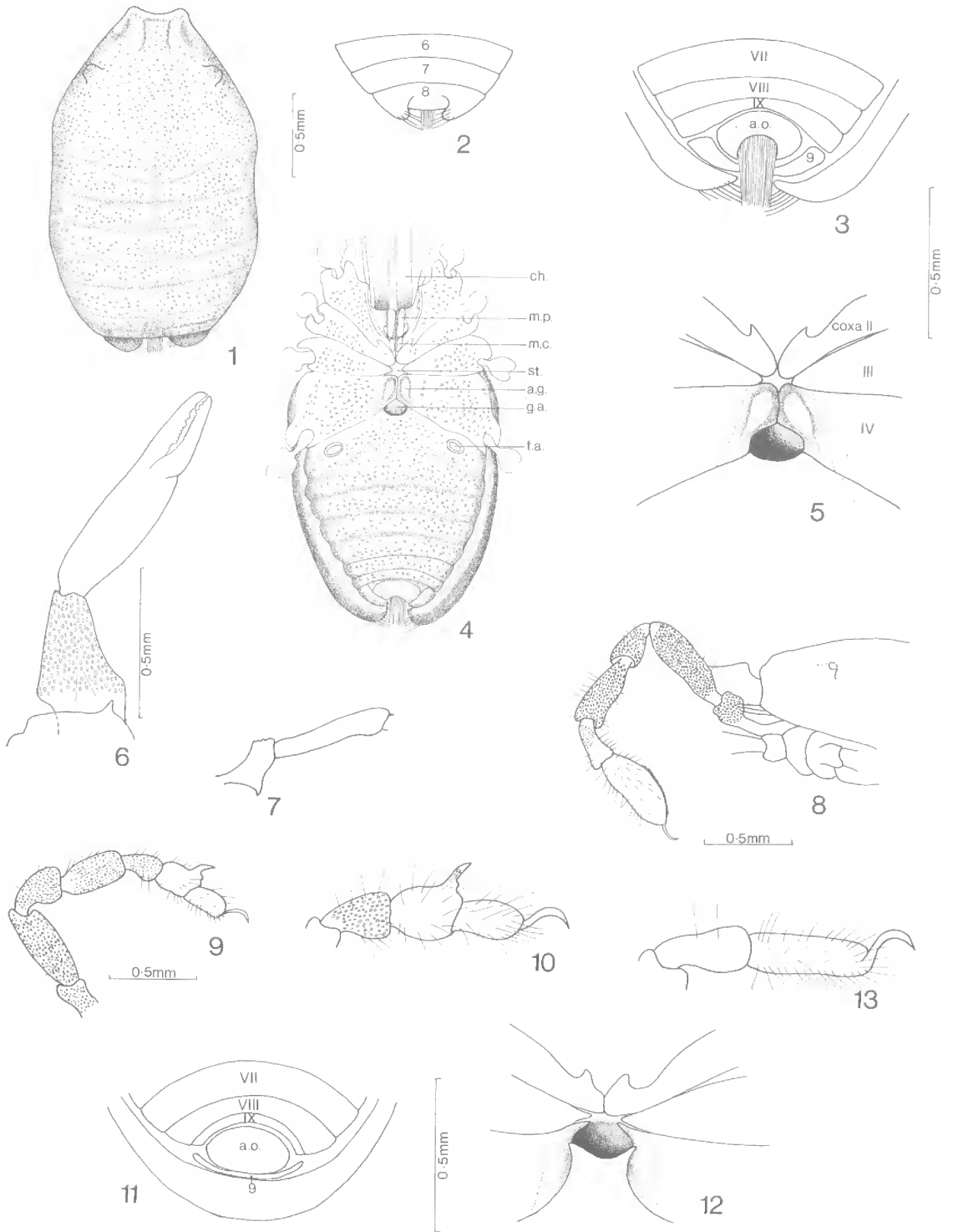
basal diameter from the lateral margin of the cephalothorax (Fig. 8) and about six diameters apart. Tergites clearly defined by transverse areas which are less granulate; tergites 7 and 8 with a shallow median groove; tergite 8 with rounded posterior projections (Fig. 2); tergite 9 divided and tucked under ventrally to form posterior part of corona analis (Fig. 3). A thick scopula of shiny 'hair' posterior to the anal operculum. Lateral margins of the abdomen with a rim formed by the folding over of the dorsal chitin, this rim including rounded projections of tergite 8.

Between coxae I on the ventral surface (Fig. 4) the soft manducatory parts of the coxae of the pedipalps and of coxae I are seen. The arculi genitales, representing the first abdominal sternite are delineated by a groove from coxae IV and border the genital aperture laterally and anteriorly. The aperture is wider than long, 1.75:1, and is well separated from coxae III by the ridges of the arculi genitales (Fig. 5). The second abdominal sternite is believed to be fused with the third and bears the genital aperture and the tracheal openings. Sternites IV-IX are clearly delineated.

CHELICERA: Basal segment (0.60mm) evenly granulate on all surfaces except the ventral which is smooth; lateral edges extended ventrally; dorsal transverse ridge present. Second segment (0.84mm) smooth. Two types of teeth on the inner surface of the chela (Fig. 6).

PEDIPALP: Trochanter with ventral process (Fig. 7). Trochanter and femur finely granulate surface, other segments smooth. Tibia slightly shorter than tarsus, 0.93:1. Tarsal claw smooth.

LEGS: On the anterior legs all segments with uniformly granulate surface except the metatarsi and tarsi. Tiny granulations on proximal region of metatarsus (Fig. 8). On the posterior legs the



Abbreviations: a.g. arculi genitales; a.o. anal operculum; ch. chelicera; g.a. genital aperture; m.p. manducatory part of palp; m.c. manducatory part of coxa I; st. sternum; t.o. tracheal opening.

TABLE 1: LEG MEASUREMENTS IN MM OF *N. capricornia* ♂ AND (-)

	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palp	0.22 (0.22)	0.34 (0.34)	0.20 (0.22)	0.28 (0.26)	—	0.30 (0.30)	1.34 (1.34)
Leg I	0.18 (0.18)	0.56 (0.56)	0.34 (0.32)	0.40 (0.36)	0.24 (0.24)	0.46 (0.44)	2.18 (2.10)
II	0.16 (0.16)	0.44 (0.42)	0.26 (0.22)	0.32 (0.30)	0.22 (0.20)	0.42 (0.40)	1.82 (1.70)
III	0.16 (0.16)	0.38 (0.38)	0.24 (0.24)	0.34 (0.30)	0.24 (0.22)	0.36 (0.34)	1.72 (1.64)
IV	0.22 (0.24)	0.50 (0.50)	0.32 (0.32)	0.36 (0.36)	0.22 (0.26)	0.22 0.20 (0.38)	2.04 (2.06)

metatarsi have granulate surface. Tarsal claws smooth. Tarsus I deeper than other tarsi with ventral pad of short hairs. Tarsus IV bipartite. Proximal segment longer than wide, 1.56:1, with dorsal spur distally (Figs. 9, 10).

DESCRIPTION OF FEMALE

Body length 2.20mm, cephalothorax width 1.14mm, abdomen width 1.24mm; chelicera basal segment 0.60, second segment 0.84mm.

This is like the ♂, with the following exceptions. There are no projections of tergite 8 so that the posterior margin of the abdomen is rounded. Tergite 9 is entire and tucked under ventrally to lie behind the anal operculum; anal scopula absent (Fig. 11). Genital aperture is longer than in ♂ and just wider than long, 1.11:1. The arculi genitales are much shorter in front of the genital aperture than in ♂ and the aperture almost abuts coxae III (Fig. 12). The aperture is partly covered posteriorly by an anterior extension of the second abdominal sternite. Tarsus IV is undivided and without a dorsal spur (Fig. 13).

DISCUSSION

The other three *Neopurcellia* spp. are from New Zealand. Of these *N. minutissima* (Forster 1948, pp. 115-6) is the only species that has a ventral spur on the palpal trochanter of both sexes as in *N. capricornia*.

N. capricornia differs from *N. minutissima* in having the second segment of the ♂ chelicera distinctly longer than the basal (1:1.40) whereas in *N. minutissima* they are almost equal (1:1.01). The proximal segment of ♂ tarsus IV is longer than wide whereas in *N. minutissima* it is as long as wide. The dorsal spur on this segment is much blunter than in *N. minutissima*. In his review of the relationships of the Sironinae, Juberthie (1970) places more importance on non-adaptive characters such as the extent

of granulation on leg segments, the cheliceral teeth, and the structure of the ovipositor and penis than previous authors have done. As only two specimens (♂, ♀) of *N. capricornia* were collected, no limbs were removed for detailed examination and the genital organs were not dissected.

It is interesting to note that *N. capricornia* ♂ and ♀ were found in the same litter sample (38 × 45cm plastic bag) of 14 samples collected at Finch Hatton. They were the only cyphophthalmids found in over 200 samples from rainforests of eastern Australia. The two Australian species, *Rakaia woodwardi* Forster 1955 and *N. capricornia* have both been found in tropical Queensland in contrast to the other Southern Hemisphere species all of which are from temperate regions.

ACKNOWLEDGMENT

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FIGS. 1-10: ♂ *Neopurcellia capricornia*. 1, body, dorsal; 2, tergites 6-8, postero-dorsal; 3, posterior segments showing composition of corona analis, postero-ventral; 4, body, ventral; 5, arculi genitales and genital aperture; 6, chelicera; 7, palpal trochanter, femur; 8, anterior cephalothorax and leg I, lateral; 9, leg IV; 10, leg IV, proximal tarsal segment with dorsal process and gland opening.

FIGS. 11-13: ♀ *Neopurcellia capricornia*. 11, corona analis; 12, arculi genitales and genital aperture; 13, leg IV, metatarsus and tarsus.